

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1-8 (Cancelled).

9. **(Currently Amended)** A method for defruiting the transponder responses received by a secondary radar in response to interrogations emitted by the radar in a recurrent manner, a recurrence being formed by the interrogation and the responses received in the course of a listening period following the interrogation, the defruiting method comprising a method comprising:

testing synchronism of transponder detections responses, wherein radial speeds of the transponders are between speeds  $V_{\min}$  and  $V_{\max}$ , such that a first response received at recurrence i is determined to be test of the synchronism of the responses received in various recurrences, a first response received in a recurrence i being considered synchronous with a second response received in another recurrence j, if:

$$\rho_j \in [\rho_i - V_{\max} \times (t_j - t_i); \rho_i - V_{\min} \times (t_j - t_i)] \text{ when } t_j > t_i, \text{ or}$$

$$\rho_j \in [\rho_i - V_{\min} \times (t_j - t_i); \rho_i - V_{\max} \times (t_j - t_i)] \text{ when } t_j < t_i,$$

$$\underline{\rho_j \in [p_i - V_{\max} \times (t_j - t_i) - \delta\rho ; p_i - V_{\min} \times (t_j - t_i) + \delta\rho] \text{ when } t_i > t_j,}$$

or

$$\underline{\rho_j \in [p_i - V_{\min} \times (t_j - t_i) - \delta\rho ; p_i - V_{\max} \times (t_j - t_i) + \delta\rho] \text{ when } t_i < t_j,}$$

where:

$V_{\min}$  and  $V_{\max}$  are respectively the minimum and maximum radial speed of the transponders with respect to the secondary radar, positive by convention for a transponder approaching the radar, the speeds  $V_{\min}$  and  $V_{\max}$  possibly being equal, at least  $V_{\min}$  or  $V_{\max}$  being nonzero;

$p_i$  and  $p_j$  are respectively the distance at which the transponder has been detected in recurrence  $i$  and in recurrence  $j$ ;

$t_i$  and  $t_j$  are respectively the instant of emission of the interrogation in recurrence  $i$  and in recurrence  $j$ ;

$\delta\rho$  is a parameter defining a tolerance on the measured distances  $p_i$  and  $p_j$ ;

$t_i$  and  $t_j$  are respectively the instant of emission of the interrogation in recurrence  $i$  and in recurrence  $j$ ;

$t_i$  and  $t_j$  are such that  $|t_i - t_j|$  is equal to the duration of the  $N$  recurrences corresponding to an azimuthal extent  $\Delta\theta$  of the antenna lobe width used by the radar.

10. **(Currently Amended)** The method as claimed in claim 9, wherein the distance tolerance parameter  $\delta\rho$  being set to zero,  $\rho_i$  and  $\rho_j$  are defined by the following relations:

$$\rho_j \in \left[ \rho_i - V_{\max} \times (t_j - t_i) ; \rho_i - V_{\min} \times (t_j - t_i) \right] \text{ when } t_j > t_i,$$

or

$$\rho_j \in \left[ \rho_i - V_{\min} \times (t_j - t_i) ; \rho_i - V_{\max} \times (t_j - t_i) \right] \text{ when } t_j < t_i,$$

~~wherein a distance tolerance is used to perform the synchronism test.~~

11. **(Currently Amended)** A method of defruiting transponder responses received by a secondary radar in response to interrogations emitted by the radar in a recurrent manner, a recurrence being formed by the interrogation and the responses received in the course of a listening period following the interrogation, said method implementing in parallel the defruiting method as claimed in claim 9 with different radial speed bins [  $V_{min}$ ;  $V_{max}$  ].

~~of defruiting in which defruiting methods as claimed in claim 9 are applied in parallel to different radial speed bins.~~

12. **(Previously Presented)** The method as claimed in claim 11, wherein the radial speed bins are contiguous.

13. **(Previously Presented)** The method as claimed in claim 11, wherein the radial speed bins are equidistributed.

14. **(Currently Amended)** The method as claimed in claim 9, wherein—, for receptions corresponding to transponders situated in the far field,  $t_i$  and  $t_j$  are such that  $|t_i - t_j|$  is equal than the duration of the recurrences corresponding to an azimuthal extent corresponding to the synchronism test is performed in the far field only on the recurrences for which the interrogation azimuth lies in the effective interrogation lobe of the secondary radar.

15. **(Currently Amended)** A defruiting system for transmitting synchronous responses to a secondary radar extractor, said system comprising a correlator configured to implement ~~A defruiter for extractor of transponder responses comprising a correlation device configured to implement the method as claimed in~~ claim 9.

16. **(Currently Amended)** A secondary radar comprising a ~~defruiter~~ defruiting system as claimed in claim 15.